

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To

Commissioner
US Department of Commerce
United States Patent and Trademark
Office, PCT
2011 South Clark Place Room
CP2-5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE
in its capacity as elected Office

Date of mailing: 18 January 2001 (18.01.01)	
International application No.: PCT/NL00/00478	Applicant's or agent's file reference: P49641PC00
International filing date: 07 July 2000 (07.07.00)	Priority date: 09 July 1999 (09.07.99)
Applicant: VAN HASSEL, Johannes, Petrus, Stanislaus, Maria et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International preliminary Examining Authority on:
20 November 2000 (20.11.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer: J. Zahra Telephone No.: (41-22) 335.83.38
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PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P49641PC00	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/NL 00/ 00478	International filing date (day/month/year) 07/07/2000	(Earliest) Priority Date (day/month/year) 09/07/1999
Applicant COÖPERATIEVE VERKOOP- EN PRODUCTIEVERENIGING ...		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☐ None of the figures.



INTERNATIONAL SEARCH REPORT

International Application No

PCT/NL 00/00473

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C09D189/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C09D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	WO 98 44056 A (STICHTING AGROTECHNOLOGISCH ONDERZOEK) 8 October 1998 (1998-10-08) page 4, line 15 -page 6, line 9 page 7, line 9 - line 34 ---	1-21
X	EP 0 593 123 A (LATENSTEIN ZETMEEL B.V.) 20 April 1994 (1994-04-20) page 3, line 24 - line 44 ---	1-21
X	L.H.KRULL ET AL.: "Industrial Uses of Gluten" CEREAL SCIENCE TODAY, vol. 16, no. 8, 1 August 1971 (1971-08-01), pages 232-236. XP000856192 page 234, left-hand column, paragraph 4 --- -/--	1-21

☒ Further documents are listed in the continuation of box C

☒ Patent family members are listed in annex

Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- & document member of the same patent family

Date of the actual completion of the international search

6 October 2000

Date of mailing of the international search report

16/10/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Lensen, H



INTERNATIONAL SEARCH REPORT

International Application No.

PCT/NL 00/00478

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication where appropriate of the relevant passages	Relevant to claim No
X	US 3 494 775 A (ANTHONY THOMAS COSCIA ET AL.) 10 February 1970 (1970-02-10) example 3 ----	1-21
P,X	EP 0 960 922 A (AVENTIS RESEARCH & TECHNOLOGIES GMBH & CO) 1 December 1999 (1999-12-01) page 3, line 11 - line 28 ----	1-21
A	DE 195 39 891 C (BSBG BREMER SONDERABFALL-BERATUNGSGESELLSCHAFT) 30 January 1997 (1997-01-30) ----	
A	GB 1 359 414 A (NATIONAL PATENT DEVELOPMENT CORPORATION) 10 July 1974 (1974-07-10) ----	
A	US 2 758 938 A (WILLIAM A. MONTERMANN) 14 August 1956 (1956-08-14) ----	
A	US 5 705 207 A (RICHARD B. COOK ET AL.) 6 January 1998 (1998-01-06) ----	
A	US 5 736 178 A (RICHARD B. COOK ET AL.) 7 April 1998 (1998-04-07) -----	



INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/NL 00/00478

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9844056	A	08-10-1998	EP 0869159 A	07-10-1998
			AU 6749898 A	22-10-1998
			EP 0971990 A	19-01-2000
EP 593123	A	20-04-1994	NL 9201805 A	16-05-1994
			AT 161693 T	15-01-1998
			DE 69316143 D	12-02-1998
			DE 69316143 T	16-04-1998
			DK 593123 T	07-09-1998
			ES 2112382 T	01-04-1998
			GR 3026462 T	30-06-1998
US 3494775	A	10-02-1970	GB 1186933 A	08-04-1970
			US 3634399 A	11-01-1972
EP 960922	A	01-12-1999	AU 4264999 A	13-12-1999
			WO 9961539 A	02-12-1999
DE 19539891	C	30-01-1997	NONE	
GB 1359414	A	10-07-1974	US 3896753 A	29-07-1975
			AU 470465 B	18-03-1976
			AU 3444171 A	19-04-1973
			CA 1044089 A	12-12-1978
			DE 2161630 A	27-07-1972
			NL 7116274 A	18-07-1972
			US 3990381 A	09-11-1976
US 2758938	A	14-08-1956	NONE	
US 5705207	A	06-01-1998	US 5736178 A	07-04-1998
			AU 5918196 A	21-11-1996
			CA 2217992 A	07-11-1996
			EP 0830070 A	25-03-1998
			WO 9634538 A	07-11-1996
US 5736178	A	07-04-1998	AU 5918196 A	21-11-1996
			CA 2217992 A	07-11-1996
			EP 0830070 A	25-03-1998
			WO 9634538 A	07-11-1996
			US 5705207 A	06-01-1998



PATENT COOPERATION TREATY

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PCT

REC'D 23 OCT 2001

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P49641PC00	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/NL00/00478	International filing date (day/month/year) 07/07/2000	Priority date (day/month/year) 09/07/1999
International Patent Classification (IPC) or national classification and IPC C09D189/00		
Applicant COÖPERATIEVE VERKOOP- EN PRODUCTIEVERENIGING ...		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 1 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☒ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 20/11/2000	Date of completion of this report 18.10.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized officer Lensen, H Telephone No. +31 70 340 2428 



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/NL00/00478

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-13 as originally filed

Claims, No.:

1-10 as received on 06/06/2001 with letter of 06/06/2001

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/NL00/00478

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	3-10
	No:	Claims	1-2
Inventive step (IS)	Yes:	Claims	3,4,7-10
	No:	Claims	1,2,5,6
Industrial applicability (IA)	Yes:	Claims	1-10
	No:	Claims	

2. Citations and explanations
see separate sheet

VI. Certain documents cited

1. Certain published documents (Rule 70.10)

and / or

2. Non-written disclosures (Rule 70.9)

see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/NL00/00478

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1). The documents D6 and D7 were not cited in the international search report.

D6 : US-A-3653925

D7 : JP-A-52105963

=D7A : WPI/Derwent 1977-74795Y- 42

=D7B : CA Volume 88, abstract 52051

2). Art. 33(2) PCT (Novelty) :

D7 discloses a gel composition having good film-forming properties and adhesion. The soluble protein is eq. wheat protein, can be used as 5-50 wt % aqueous solution. The composition also comprises a water-soluble dialdehyde compound such as glyoxal, which is known as a crosslinking agent.

When the solution is applied to a glass plate and left overnight, a smooth strong coating was formed.

The subject-matter of claims 1-2 appears to be not novel in view of D7.

3). Art. 33(3) PCT (Inventive step) :

D6 discloses a process for preparing coatings comprising wheat gluten, which is a protein substance consisting of two components, namely glutenin and gliadin. The coatings are prepared from alkaline, relatively homogeneous, fluid dispersions of wheat gluten. A variety of ingredients may be included in the dispersions to impart increased flexibility. These ingredients are termed "plasticisers" and may include various polyols and higher molecular weight alcohols such as glycerol.

The dispersions may be applied to various substrate surfaces such as glass, steel or plastics and be removed therefrom.

The subject-matter of claim 1 differs from D6 in that the composition comprises a cross linking or a matrix forming agent.

The problem to be solved is to provide a composition for a surface coating providing a better protection against all kinds of contamination.

The solution involving a cross linking agent does not involve an inventive step for the following reasons :



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/NL00/00478

D7 discloses a gel composition having good film-forming properties and adhesion. The soluble protein is eq. wheat protein, can be used as 5-50 wt % aqueous solution. When the solution is applied to a glass plate and left overnight, a smooth strong coating was formed.

D4 relates to aqueous coating compositions containing a water-soluble film-forming protein and a latent insolubilizing agent. The compositions yield water-resistant films when applied to a substrate and heated briefly at moderate temperature. The compositions may be applied to any desired surface such as wallboard or plaster (see example 3). The amine-reactive epichlorohydrin residues react with the protein and insolubilize it by a cross-linking reaction.

The subject-matter of claims 1-2 and 5-6 appears not to involve an inventive step in view of the combined technical teaching of D6 and D4 or D7.



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/NL00/00478

Re Item VI

Certain documents cited

EP-A-960922 (Aventis Research & Technologies GmbH & Co)

Date of filing : 26/05/1998

Date of publication 01/12/1999

Re Item VIII

Certain observations on the international application

There is a inconsistency between the description and claim 1.

According to the description on page 4 : the fluid comprising at least a cross linking agent, or a matrix forming agent such as polyvinyl alcohol. So there are two distinct additives or agents .

According to the newly filed claim 1 the cross-linking and the matrix forming can be one and the same.



EPO - DG 1

06.06.2001

NEW CLAIMS

(54)

1. A composition for a surface coating comprising a proteinaceous substance in the form of a mixture of a glutenin and a gliadin, which proteinaceous substance is dispersed in a fluid comprising at least a cross-linking or matrix forming agent.
- 5 2. A composition according to claim 1, wherein the proteinaceous substance comprises gluten derived from wheat.
3. A composition according to claim 1 or 2, wherein the cross-linking or matrix forming agent is polyvinylalcohol.
4. A composition according to claim 3, wherein the polyvinylalcohol is
10 present in an amount of 0.5 to 20%.
5. A method to protect a surface against the undesired effect of a contamination on said surface comprising applying a coating to said surface of a composition according to any of the preceding claims.
6. A method according to claim 5, wherein the surface is mineral, metal,
15 plastic or wood.
7. A method according to claim 5 or 6, wherein the contamination comprises graffiti, algae, moss or fungi growth.
8. A method according to any of the claims 5-7, wherein contamination is removed from said surface by removing the coating on which the contamination
20 is deposited.
9. A method for applying a lacquer or paint pattern or picture on a surface comprising masking at least a part of said surface by applying a coating of a composition according to any of the claims 1-4, and further comprising applying lacquer or paint to said surface.
- 25 10. A method according to claim 9, further comprising removing the coating.



PATENT COOPERATION TREATY

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From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

PRINS, Ir. A.W.
VEREENIGDE
Nieuwe Parklaan 97
NL-2587 BN The Hague
PAYS-BAS

22 OKT 2001

Beantwoordt op brief gezonden

Applicant's or agent's file reference
P49641PC00

PCT

NRF₂ 9-1-2002
NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT
(PCT Rule 71.1)

Date of mailing
(day/month/year) 18.10.2001

IMPORTANT NOTIFICATION

International application No.
PCT/NL00/00478

International filing date (day/month/year)
07/07/2000

Priority date (day/month/year)
09/07/1999

Applicant
COÖPERATIEVE VERKOOP- EN PRODUCTIEVERENIGING ...

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4 REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/



European Patent Office - P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk - Pays Bas
Tel. +31 70 340 - 2040 Tx: 31 651 epo nl
Fax: +31 70 340 - 3016

Authorized officer

Sinanovic, E

Tel. +31 70 340-2672





PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P49641PC00	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/NL00/00478	International filing date (<i>day/month/year</i>) 07/07/2000	Priority date (<i>day/month/year</i>) 09/07/1999
International Patent Classification (IPC) or national classification and IPC C09D189/00		
Applicant COÖPERATIEVE VERKOOP- EN PRODUCTIEVERENIGING ...		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70 16 and Section 607 of the Administrative Instructions under the PCT).

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3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☒ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 20/11/2000	Date of completion of this report 18.10.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized officer Lensen, H Telephone No. +31 70 340 2428 



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/NL00/00478

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-13 as originally filed

Claims, No.:

1-10 as received on 06/06/2001 with letter of 06/06/2001

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/NL00/00478

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	3-10
	No:	Claims	1-2
Inventive step (IS)	Yes:	Claims	3,4,7-10
	No:	Claims	1,2,5,6
Industrial applicability (IA)	Yes:	Claims	1-10
	No:	Claims	

2. Citations and explanations
see separate sheet

VI. Certain documents cited

1. Certain published documents (Rule 70.10)

and / or

2. Non-written disclosures (Rule 70.9)

see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/NL00/00478

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1). The documents D6 and D7 were not cited in the international search report.

D6 : US-A-3653925

D7 : JP-A-52105963

=D7A : WPI/Derwent 1977-74795Y- 42

=D7B : CA Volume 88, abstract 52051

2). Art. 33(2) PCT (Novelty) :

D7 discloses a gel composition having good film-forming properties and adhesion. The soluble protein is eq. wheat protein, can be used as 5-50 wt % aqueous solution. The composition also comprises a water-soluble dialdehyde compound such as glyoxal, which is known as a crosslinking agent.

When the solution is applied to a glass plate and left overnight, a smooth strong coating was formed.

The subject-matter of claims 1-2 appears to be not novel in view of D7.

3). Art. 33(3) PCT (Inventive step) :

D6 discloses a process for preparing coatings comprising wheat gluten, which is a protein substance consisting of two components, namely glutenin and gliadin. The coatings are prepared from alkaline, relatively homogeneous, fluid dispersions of wheat gluten. A variety of ingredients may be included in the dispersions to impart increased flexibility. These ingredients are termed "plasticisers" and may include various polyols and higher molecular weight alcohols such as glycerol.

The dispersions may be applied to various substrate surfaces such as glass, steel or plastics and be removed therefrom.

The subject-matter of claim 1 differs from D6 in that the composition comprises a cross linking or a matrix forming agent.

The problem to be solved is to provide a composition for a surface coating providing a better protection against all kinds of contamination.

The solution involving a cross linking agent does not involve an inventive step for the following reasons :

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/NL00/00478

D7 discloses a gel composition having good film-forming properties and adhesion. The soluble protein is eq. wheat protein, can be used as 5-50 wt % aqueous solution. When the solution is applied to a glass plate and left overnight, a smooth strong coating was formed.

D4 relates to aqueous coating compositions containing a water-soluble film-forming protein and a latent insolubilizing agent. The compositions yield water-resistant films when applied to a substrate and heated briefly at moderate temperature. The compositions may be applied to any desired surface such as wallboard or plaster (see example 3). The amine-reactive epichlorohydrin residues react with the protein and insolubilize it by a cross-linking reaction.

The subject-matter of claims 1-2 and 5-6 appears not to involve an inventive step in view of the combined technical teaching of D6 and D4 or D7.



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/NL00/00478

Re Item VI

Certain documents cited

EP-A-960922 (Aventis Research & Technologies GmbH & Co)

Date of filing : 26/05/1998

Date of publication 01/12/1999

Re Item VIII

Certain observations on the international application

There is a inconsistency between the description and claim 1.

According to the description on page 4 : the fluid comprising at least a cross linking agent, or a matrix forming agent such as polyvinyl alcohol. So there are two distinct additives or agents .

According to the newly filed claim 1 the cross-linking and the matrix forming can be one and the same.



INTERNATIONAL SEARCH REPORT

International Application No

PCT/NL 00/00478

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C09D189/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C09D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 44056 A (STICHTING AGROTECHNOLOGISCH ONDERZOEK) 8 October 1998 (1998-10-08) page 4, line 15 -page 6, line 9 page 7, line 9 - line 34	1-21
X	EP 0 593 123 A (LATENSTEIN ZETMEEL B.V.) 20 April 1994 (1994-04-20) page 3, line 24 - line 44	1-21
X	L.H.KRULL ET AL.: "Industrial Uses of Gluten" CEREAL SCIENCE TODAY, vol. 16, no. 8, 1 August 1971 (1971-08-01), pages 232-236, XP000856192 page 234, left-hand column, paragraph 4 -/-	1-21

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

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NL - 2280 HV Rijswijk

Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,

Fax: (+31-70) 340-3016

Authorized officer

Lensen, H



INTERNATIONAL SEARCH REPORT

Information on patent family members

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PCT/NL 00/00478

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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(74) Agent: **PRINS, A., W.**; Vereenigde, Nieuwe Parklaan 97,
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(71) Applicant (*for all designated States except US*):
**COÖPERATIEVE VERKOOP- EN PRODUC-
TIEVERENIGING VAN AARDAPPELMEEL EN
DERIVATEN AVEBE B.A. [NL/NL];** Beneden Ooster-
diep 27, NL-9641 JA Veendam (NL).

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(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **VAN HASSEL, Johannes, Petrus, Stanislaus, Maria [NL/NL];** Eindsestraat 7, NL-5439 NH Linden (NL). **MEINTS, Hendrik [NL/NL];** Van Veenspark 28a, NL-9422 HS Smilde (NL).

(54) Title: **PROTEINACEOUS COATING**

(57) Abstract: The invention relates to coatings to protect surfaces against the undesired effects of deposits or contamination, such as graffiti, algae, moss or fungal growth or other environmental contamination. The invention provides a surface coating comprising a proteinaceous substance or derivatives thereof, capable of protecting surfaces against the undesired effects of deposits or contamination as varied as scrawl or graffiti, algae or fungal growth, brines, or other environmental contamination.

WO 01/04223 A1



Title: Proteinaceous coating

The invention relates to coatings to protect surfaces against the undesired effects of deposits or contamination, such as graffiti, algae, moss or fungal growth or other environmental contamination.

5 Keeping surfaces clean these days often requires special attention. Many surfaces exposed to the environment are continuously at risk of being contaminated by undesired deposits, such as soot, grease, traffic dust, pollution, accidental stains, etc. Wilful
10 contamination of a surface often is seen in the form of graffiti or scrawl on walls, doors, pillars, windows, roofs and other surfaces of buildings. Also, growth of algae, moss or fungi on surfaces is in many cases undesired. Especially surfaces under damp or wet
15 conditions, such as north- or east exposed surfaces, or surfaces in bathroom or kitchen are susceptible to algae, moss or fungal growth. Algae or fungi or symbiotic populations of algae and fungi occur particularly on surfaces painted with water based paint. Underwater
20 surfaces, such as on docks or ships, in particular are prone to algae growth.

Furthermore, packing material, such as wrapping paper or carton, pallets, wood chips or organic fibers, is often treated with fungicide to prevent fungal growth,
25 especially on its surface, for example due to damp conditions that are seen during transport over seas, or transport under other circumstances that promote fungal growth.

Above surfaces need protection against such
30 undesired contamination, yet other surfaces need only be partly protected or masked, e.g. in those case where paint or lacquer patterns or pictures need to be applied,

requiring masking only part of the (irregular) surface with a coating, after which a paint or lacquer is applied to the uncoated part. The masking coating is removed when the desired pattern or picture has been applied.

5 Several surface coatings exist that serve to protect a surface under above mentioned circumstances. The application of permanent coatings is well known in the case of protection against graffiti. Often, such coatings comprise polyurethane, epoxy, or combinations thereof.

10 Disadvantages of permanent surface coatings is that they are often clearly visible, that it is often required to clean the surface thoroughly before applying it, and that the graffiti needs to be removed by applying, often harsh, chemical solvents.

15 In contrast to permanent coatings, self-sacrificing coating systems exist, that are removed together with the contamination. Several self-sacrificing systems exist, for example several based on a copolymer, which however need to be removed with a corresponding chemical solvent,
20 several based on an acrylate dispersion, which need to be removed with, often harsh, alkaline solvents, and several based on polysaccharide (see for example EP 0365 584 B1) which have the advantage that they can be removed with water, making them however less suitable for outdoor use.
25 In general, self-sacrificing systems last only for a short time on a surface and need to be re-applied frequently.

 Furthermore, semi-permanent coating systems are known which are in general a combination of a first layer
30 of a permanent coating as above, combined with a top layer of a self-sacrificing system.

 For antifungal treatment of packing material, said material is often sprayed with a more or less dense coating comprising a fungicide. However, clearly due to
35 the toxicity of a fungicide, treatment with fungicides is

at most times undesired, especially when transporting edible goods or products that are retailed directly.

It is an object of the present invention to provide an alternative coating system that preferably avoids
5 most, if not all, of the disadvantages of the coating systems mentioned above.

The invention provides a surface coating comprising a proteinaceous substance or derivatives thereof, capable
10 of protecting surfaces against the undesired effects of deposits or contamination as varied as scrawl or graffiti, algae, moss or fungal growth, brines, or other contamination. In a preferred embodiment, said proteinaceous substance comprises a mixture of a
15 relatively elastic protein and a relatively viscous protein. Elasticity and viscosity are preferred to provide superior coating characteristics. In a preferred embodiment, said proteins are capable of forming multimeric complexes to further enhance the coating
20 capacity of the proteinaceous substance. Preferred proteinaceous substances can be found among animal proteins such as collagen and/or gelatin, or among plant proteins such as storage proteins. Recombinant proteins have the advantage that they can specifically be designed
25 for inclusion in a coating for distinct purposes, however, have the disadvantage of price. In a most preferred embodiment, the invention provides a surface coating comprising gluten. Gluten are in general relatively water-insoluble proteins from for example
30 wheat and other edible grasses, comprising in general a mixture of two proteins (each of which are suitable for use in a coating as provided by the invention): glutenins and gliadins, which contain in general 30-50% glutamine (Q) and 10-25% proline (P). Glutenins are of high
35 molecular weight, comprising from 500-1000 amino acid molecules, covalently bound head-to-tail by disulfide

bridges, forming multimeric complexes. Glutenins are in general responsible for the elasticity and extensibility of the gluten. The gliadines are of lower molecular weight, comprising from 250 to 600 amino acids, are
5 monomeric, and are in general responsible for the viscosity of the gluten.

Advantages of a proteinaceous coating is that it is in essence bio-degradable, it is not toxic for man, animals plants and environment, cannot or only little
10 burn, and is a renewable source being a natural product. Applying a proteinaceous coating results in a relatively elastic film, due to the presence of elastic protein, while it can easily be applied due to the viscosity generated by a viscous protein. Furthermore, the relative
15 water-insolubility of a proteinaceous substance allows outdoor use. The proteinaceous film can furthermore simply be removed with water despite its relative water-insolubility, e.g. by applying a high-pressure sprayer, without having to resort to chemical solvents or other
20 corrosive or abrasive techniques, and less expensive over existing coatings.

In a preferred embodiment, the invention provides a surface coating comprising gluten wherein said gluten is derived from wheat, or other gluten (derivatives) easily
25 obtainable in the field. Preferably, said gluten or derivatives thereof are dispersed in a fluid that easily can be applied to the specific surface to be treated; thickness and other characteristics of such a fluid can easily be changed to accommodate diverse needs related to
30 diverse surfaces.

Preferred is a surface coating according to the invention wherein said proteinaceous substance or derivatives thereof are dispersed in a fluid comprising at least a crosslinking agent, or a matrix forming agent
35 such as polyvinylalcohol, preferably in a range from 0.5 to 20, more preferably 1 to 10, most preferably 2 to 8%

(crosslinking) agent. Crosslinking agents are well known in the art. Crosslinking provides a coating according to the invention with a better resistance to water, at least to cold water, whereby said coating as provided by the invention is better resistant to weather influences such as rain and sleet, and subsequent drying. Removing it simply requires the use of warm or hot water.

A surface coating according to the invention can be applied on a great variety of surfaces, for example wherein said surface is a mineral, such as brickwork or masonry, concrete, plaster, stone, glass; a metal such as iron or steel, aluminium, copper; a plastic such as (synthetic) rubber, polymethylmetacrylate, polycarbonate, polyurethane, epoxy, polyvinylchloride, polypropylene, ureumformaldehyde, polyesters or wood, including painted wood. Foreseen applications are use as biodegradable coating or as active ingredient of an other protective system on food- and feed products to avoid (effects of) contamination and or pollution. Use as a biodegradable coating or active ingredient of an other protective system on walls, roofs, floors, (outside) furniture, fences, screens to avoid the build up or to remove the green film containing algae and other organisms. Use as a biodegradable coating or as an active or passive ingredient of an other protective system e.g. for all types of packaging materials e.g. wood materials and pallets. Use as a solid component added to a matrix or to a coating as an active or passive ingredient, as part of an other protective system consisting of; wood or based on wood, a synthetic material or based on a synthetic material, natural polymers or based natural polymers, concrete or based on concrete, clay or based on clay. Use as an additive to water containing systems to prevent or remove the green film or haze. Use as herbicide to prevent or inhibit or destroy plant growth. Use as fungicide. Use as pesticide. Use for treatment of thatched or tiled roofs and such, to avoid and/or remove

primarily green films containing algae, fungi, moss and such, thereby protecting the roof from the deteriorating effects of these growths.

Painted surfaces in general are advantageously
5 treated with a surface coating according to the invention to protect them against contamination or the undesired effects thereof. In particular, the invention provides a surface coating protecting surfaces against graffiti or algae or fungi growth. Furthermore, the invention
10 provides use of a surface coating as provided by the invention as masking coating. The invention furthermore provides a method to protect a surface against the undesired effect of a contamination on said surface comprising applying a coating comprising gluten or
15 derivatives thereof to said surface, optionally, when so desired to remove a contamination, further comprising removing said contamination from said surface by removing said coating, e.g. by applying water, for example under high pressure. Preferably, a coating as provided by the
20 invention is used in a method according to the invention to protect a surface against the undesired effect of a contamination on said surface.

In addition, the invention provides a method for applying a lacquer or paint pattern or picture on a
25 surface comprising masking at least a part of said surface with a coating according to the invention further comprising applying lacquer or paint to, preferably, an unmasked part of said surface. A coating as provided by the invention is thus used in a method to mask or protect
30 parts of a surface that thereafter is sprayed or otherwise treated with lacquer or paint in order to provide said surface with a picture or pattern. The masking coating is removed or washed off, for example by applying water with sufficient pressure, preferably when
35 the paint or lacquer forming the desired pattern or picture has sufficiently set.

The invention is further explained in the detailed description without limiting the invention thereto.

Detailed description.

5

A coating as provided by the invention may for example contain the following components:

- proteinaceous substance such as wheat protein
- thickener
- 10 weakening agent
- preservative
- anti foaming agent

The thickener may be selected in the range of wheat, - or potato, - or corn starch. Thickeners like guar gum, xanthaan gum, locust bean gum, methyl-cellulose and 15 derivatives thereof or carboxymethylcellulose and CMC derivatives can also be used. Weakening agents can be chosen out of the group of alkane-glycolen, glycerol, sorbitol, mono and or disacharrides, or others known in the art. To preserve the dispersion a preservative may be 20 used. It can for example be chosen from the group organic acids from c-1 to c-4, sorbic acid, benzoic acid or combinations thereof. To prevent foaming an anti-foaming agent can be used. All the components may be dissolved or 25 dispersed in a suitable fluid such as water to be applied as coating or spray.

A base suspension contains for example a protein, such as gluten, a preservative, such as propionic acid, and 30 water. For preparation of a base suspension based on gluten the gluten is dispersed in water slowly and distributed finely while stirred continuously with an overhead stirring device. After addition of the gluten to the water the suspension is heated during stirring with 35 an overhead stirring device to de aerate the suspension and then stirred continuously for a suitable time. The base suspension is thus obtained. Additives can be added to the water both before and after the proteinaceous

substance. If desired the additives can be mixed with the substance before the substance is dispersed.

If so desired a coating suspension as provided by the invention contains an additive, chosen from the group consisting of thickeners, plasticizers, acids, proteins, hydrofobic substances or combinations thereof. Stability of a suspension can be further improved by adding additives such as thickeners, acids proteins or combinations thereof. The addition of acids can likewise improve the stability and the rheological behaviour of the suspension. Such acids can be selected from the group consisting of inorganic acids such as hydrochloric acid, phosphoric acid, or organic acids such as lactic acid, propionic acid, ascorbic acid, citric acid or combinations thereof. Thickeners are likewise suitable for influencing the stability and the rheological behaviour of the suspension. The thickener is preferably selected from the group consisting of modified cellulose, such as carboxymethyl cellulose (further referred to as CMC), or from other modified or non-modified polysaccharides such as locust bean gum, guar gum, gum arabic, xanthan gum, alginate, starch or combinations thereof. Plasticizers are used to make the coatings flexible. The plasticizer can be chosen for instance from the group consisting of fatty acids, fatty acid derivatives, phthalates, sebacates, high-molecular alcohols, triethanolamine, lactamides, phospholipids, mono-, di-, and oligosacharides, acids, polyoles or derivatives thereof such as polyethylene glycol, polyethylene glycol esters, propylene glycol, glycerol, diglycerol, 1,2,6-hexanetriole, sorbitol, mannitol, saccharose, mono- and di-glycerides or combinatins thereof. Other samples can be found in Giam et al., J. of Food Prot. 50(9), 769-782 (1987). In a preferred embodiment the plasticizer is a food compatible and/or degradable substance such as glycerol, and this is added preferably in a concentration between 0 and 45% (v/w). more preferably in a concentration between 5 and 30%.

Hydrophobic substances are used to reduce the moisture permeability of the foils or coatings. They are chosen for instance from oils, fats, waxes, emulsifiers or combinations thereof.

5

Examples

Example 1

10

With laboratory trials concerning a filter-paper test the different components of a coating dispersion were screened on their influence on algae growth. The protein derivative inhibited both the growth of algae on the filter and on the remaining part of the agarmedium after inoculation of the filter with algae. The inhibiting effect of propionic acid was limited to the filter only: the non covered part of the agarmedium turned green.

15

20 Example 2

Different trials of surface treatment of concrete tiles on the factory's premises with the product applied by paint brush or paint roller on the 1st of October 1998 changed the green film within 1 week. The original concrete colour came back. The effect remained for several months.

25

Example 3

30

Spraying the product on a concrete surface in February 1999 gave comparable effects with the October 1998 trials (see 2). Different dosages were applied and the results were comparable with those from earlier tests at the same dosage and place. Smaller dosages gave a limited effect.

35

Example 4

Spraying the coating on aluminium covered with a green film, gave good and comparable effects as with earlier tests (2+3): The green film disappeared and after several weeks a dried dark coloured debris was remaining. This could be removed by hand rather easily.

Example 5

10

Treating a vertical concrete wall on the factory's premises in October 1998 with the coating destroyed the green film and the original colour of the concrete came back and the algae did not come back until at least July 1999.

Example 6

Trials with treatment of a thatched roof of a tool shed in an enclosed garden in the summer of 1999 to remove the green film were successful.

Example 7

In 1998 a wooden surface in an enclosed garden was treated with a coating of the vegetable protein by writing letters on said surface with said coating. Afterwards the green film on the treated surface disappeared and at least till July 1999 the effect of the treatment has remained.

Example 8

In 1999 a moss overgrown wooden sleeper in an enclosed garden, also polluted with a green film, was treated with the product. The green film disappeared and the moss turned yellow, dried out and was easily removed.

Example 9

On May 24, 1999 a wooden fence in an enclosed garden polluted with (crustaceous) lichen (esp. yellow and brown
5 coloured) was treated with the a surface coating as provided by the invention. In June the organisms were discoloured, when compared with those on the untreated parts of the fence, and easily removed.

10 Example 10

Treatment of bricks of a building with a gluten coating. The green shield/film disappeared. After drying the parts which remained of the green film and coating could be
15 removed by mechanical force rather easily. After removal, a green film developed again.

Example 11

20 Treatment of moss on a roof with the product turned the green moss yellow. Examination under a microscope learned that no trace of chlorophyll was left. Maybe the protein is absorbed by this organism (and algae) and in the cell blocks the formation of chlorophyll.

25

Example 12

Growth oss, growing in a lawn between grass was blocked by the product. The grass, which was thereby treated at
30 the same time, was at first inhibited in its growth, but recovered after a while.

Example 13

35 A coating as provided by the invention was applied to a part of a concrete wall. The following day, to said treated part and an untreated control part, graffiti was applied with a spray paint from a spray can (Histor spuitlak), which was left to dry for one day. The

following day, the wall was cleaned by applying water under high pressure or by treating it with a brush and hot water. From the treated wall, graffiti was easily removed, whereas it was impossible to remove the graffiti from the untreated part.

Example 14

A coating as provided by the invention was applied repeatedly to a part of a concrete wall. It was no problem to apply the coating repeatedly, every subsequent layer held well to the foregoing layer. To said multiple treated part and an untreated control part, graffiti was applied with a spray paint from a spray can (Histor sputlak), which was left to dry for one day. The following day, the wall was cleaned by applying water under high pressure or by treating it with a brush and hot water. From the treated wall, graffiti was easily removed, whereas it was impossible to remove the graffiti from the untreated part, applying only one layer of coating was sufficient for protection against graffiti.

Example 15

To further study the effect of a coating on the protection of a surface against graffiti, several types of graffiti (applied by spraycan "Flexa" acrylic lacquer; spraycan "Tectyl amber"; spraycan "Duplicolor" alkyd-resin lacquer, or waterproof felt-tip(pen) "Snowman" were applied to several types of surface (glass, natural stone, baked clay, concrete, steel, copper, aluminium, acrylic, fir wood, cedar wood, painted wood), treated with said coating or left untreated. After one day drying all types of graffiti were easily removed from all treated surfaces by simply brushing with water, whereas none of the untreated surfaces were satisfactorily cleaned.

Example 16

A polyester surface of a boat was treated with a coating according to the invention. No algae growth was observed
5 after 2 weeks.

Claims

1. A surface coating comprising a proteinaceous substance.
2. A coating according to claim 1 wherein said proteinaceous substance comprises a mixture of a
5 relatively elastic protein and a relatively viscous protein.
3. A coating according to claim 2 wherein said protein is capable of forming multimeric complexes.
4. A coating according to claim 2 or 3 wherein said
10 relatively elastic protein comprises glutenin.
5. A coating according to claim 2 or 3 wherein said relatively viscous protein comprises gliadin.
6. A coating according to anyone of claims 1 to 5 wherein said proteinaceous substance at least comprises
15 gluten.
7. A coating according to claim 6 wherein said gluten is derived from wheat.
8. A surface coating according to anyone of claims 1 to 7 wherein said proteinaceous substance or derivative
20 thereof is dispersed.
9. A coating according to claim 8 wherein said proteinaceous substance or derivative thereof is dispersed in a fluid comprising at least a cross-linking or matrix forming agent.
- 25 10. A coating according to claim 9 wherein said cross-linking agent allows multimeric complex formation.
11. A coating according to anyone of claims 1 to 10 wherein said surface is mineral, metal, plastic or wood.
12. A coating according to anyone of claims 1 to 11 for
30 protecting surfaces against graffiti.
13. A coating according to anyone of claims 1 to 12 for protecting surfaces against algae, moss or fungi growth.

14. A method to protect a surface against the undesired effect of a contamination on said surface comprising applying a coating comprising a proteinaceous substance or derivative thereof to said surface.

5 15. A method according to claim 14 further comprising removing said contamination from said surface by removing said coating.

16. A method according claim 14 or 15 wherein said coating comprises a coating according to any one of claims
10 1 to 13.

17. Use of a coating according to anyone of claims 1 to 13 to protect a surface against the undesired effect of a contamination on said surface.

18. Use of a surface coating according to anyone of
15 claims 1 to 13 to clean a surface.

19. Use of a surface coating according to anyone of claims 1 to 11 as masking coating.

20. A method for applying a lacquer or paint pattern or picture on a surface comprising masking at least a part
20 of said surface with a coating according to anyone of claims 1 to 11 further comprising applying lacquer or paint to said surface.

21. A method according to claim 20 further comprising washing off said coating.



Claims

1. A surface coating comprising a proteinaceous substance.
2. A coating according to claim 1 wherein said proteinaceous substance comprises a mixture of a
5 relatively elastic protein and a relatively viscous protein.
3. A coating according to claim 2 wherein said protein is capable of forming multimeric complexes.
4. A coating according to claim 2 or 3 wherein said
10 relatively elastic protein comprises glutenin.
5. A coating according to claim 2 or 3 wherein said relatively viscous protein comprises gliadin.
6. A coating according to anyone of claims 1 to 5 wherein said proteinaceous substance at least comprises
15 gluten.
7. A coating according to claim 6 wherein said gluten is derived from wheat.
8. A surface coating according to anyone of claims 1 to 7 wherein said proteinaceous substance or derivative
20 thereof is dispersed.
9. A coating according to claim 8 wherein said proteinaceous substance or derivative thereof is dispersed in a fluid comprising at least a cross-linking or matrix forming agent.
- 25 10. A coating according to claim 9 wherein said cross-linking agent allows multimeric complex formation.
11. A coating according to anyone of claims 1 to 10 wherein said surface is mineral, metal, plastic or wood.
12. A coating according to anyone of claims 1 to 11 for
30 protecting surfaces against graffiti.
13. A coating according to anyone of claims 1 to 12 for protecting surfaces against algae, moss or fungi growth.



14. A method to protect a surface against the undesired effect of a contamination on said surface comprising applying a coating comprising a proteinaceous substance or derivative thereof to said surface.

5 15. A method according to claim 14 further comprising removing said contamination from said surface by removing said coating.

16. A method according claim 14 or 15 wherein said coating comprises a coating according to any one of claims
10 1 to 13.

17. Use of a coating according to anyone of claims 1 to 13 to protect a surface against the undesired effect of a contamination on said surface.

18. Use of a surface coating according to anyone of
15 claims 1 to 13 to clean a surface.

19. Use of a surface coating according to anyone of claims 1 to 11 as masking coating.

20. A method for applying a lacquer or paint pattern or picture on a surface comprising masking at least a part
20 of said surface with a coating according to anyone of claims 1 to 11 further comprising applying lacquer or paint to said surface.

21. A method according to claim 20 further comprising washing off said coating.

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99202264.0 9 July 1999 (09.07.1999) **EP**
- (71) Applicant (*for all designated States except US*):
COÖPERATIEVE VERKOOP- EN PRODUCTIEVERENIGING VAN AARDAPPELMEEL EN DERIVATEN AVEBE B.A. [NL/NL]; Beneden Oosterdiep 27, NL-9641 JA Veendam (NL).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **VAN HASSEL, Johannes, Petrus, Stanislaus, Maria** [NL/NL]; Eindsestraat 7, NL-5439 NH Linden (NL). **MEINTS, Hendrik** [NL/NL]; Van Veenspark 28a, NL-9422 HS Smilde (NL).
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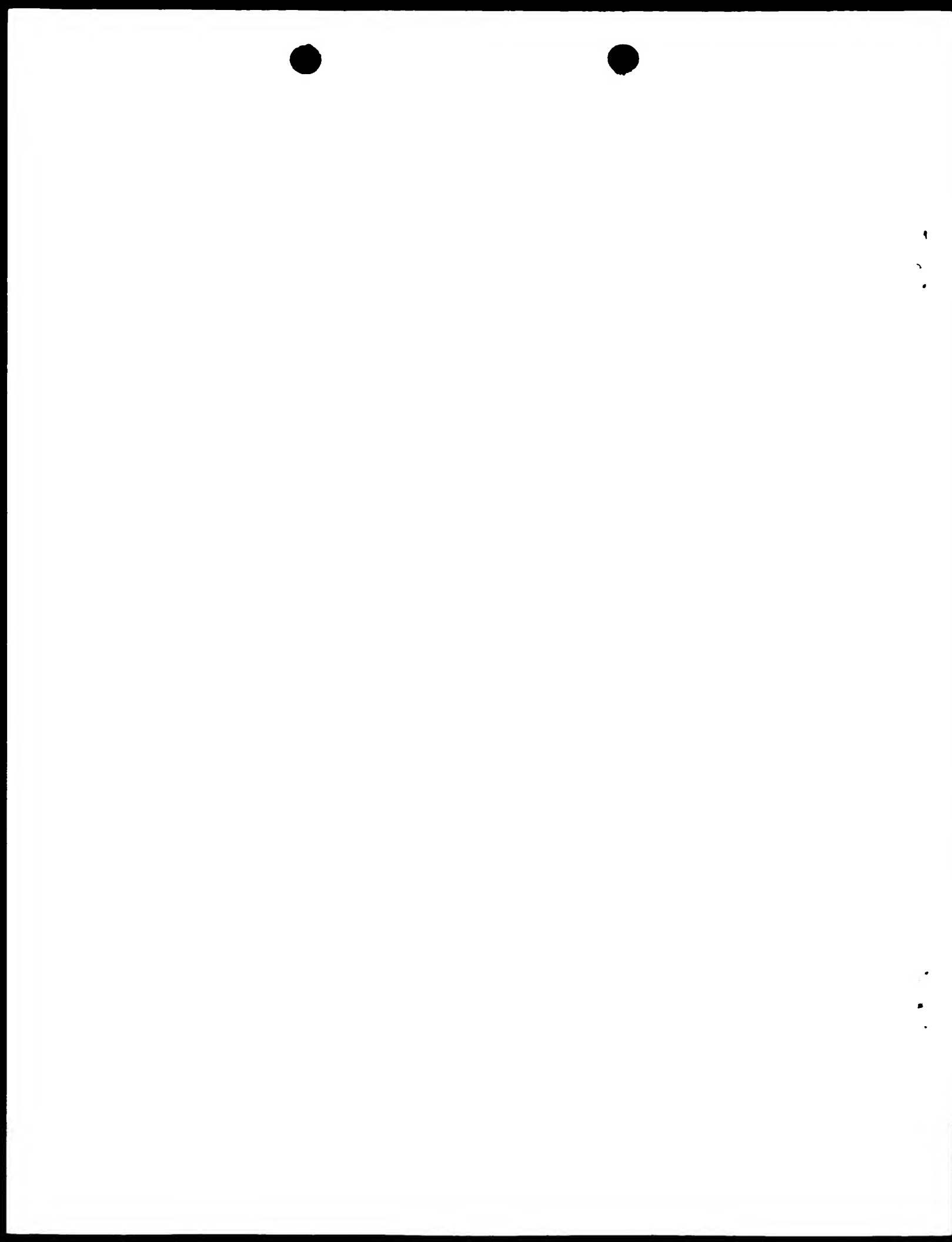
For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **PROTEINACEOUS COATING**

(57) Abstract: The invention relates to coatings to protect surfaces against the undesired effects of deposits or contamination, such as graffiti, algae, moss or fungal growth or other environmental contamination. The invention provides a surface coating comprising a proteinaceous substance or derivatives thereof, capable of protecting surfaces against the undesired effects of deposits or contamination as varied as scrawl or graffiti, algae or fungal growth, brines, or other environmental contamination.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

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IPC 7 C09D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, PAJ

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040. Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Lensen, H



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International Application No
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